Title:

Removing the next IPv6 deployment speed-bumps

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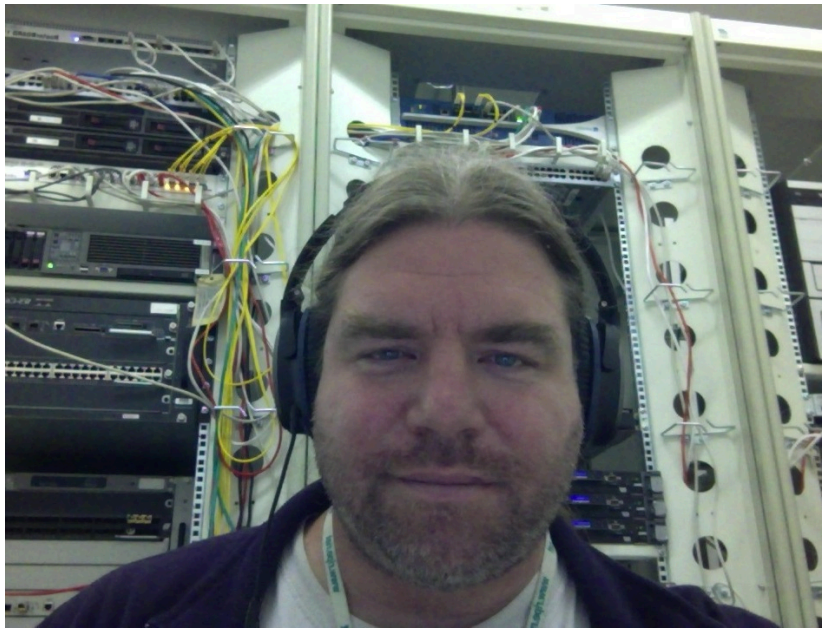
IPv6 Troubleshooting for Helpdesks using isp.test-ipv6.com document

About Me – A Quick History



Name: Jan Žorž <zorz@isoc.org>

Founder of Slovenian Go6 Institute

Worked in Internet operations for 20+ years

16 years of IPv6 experience

Active and contributing member of RIPE and IETF communities

Primary co-author of RIPE-501/RIPE-554 IPv6 procurement BCP document

Co-author of RFC 6346 (A+P approach to IPv4 depletion)

Joined Internet Society DO team in December 2012

Walls-of-text warning

Despite long contemplations on how to make this slide-pack without walls-of-text – we could not find any better way how to tell our story.

We apologize for any inconvenience. ☺

Please, bear with us anyway…

Misconceptions and reality ;)

- **Disclaimer: This document is *not* an ISOC document. This is a product of a group of a brilliant experts from the community (list with names comes later in the slide pack).**
- **I just happen to be the initiator and one of the editors of the document**
- **I would like to thanks ISOC for dedicating some of my working time to run this effort.**

Removing one of the next IPv6 speedbumps

- One of the first speed-bumps was addressed by RIPE-554
- Next speed-bump is lack of IPv6 knowledge at ISP helpdesks

IT helpdesk staff can be… difficult sometimes ☺

Removing one of the next IPv6 speedbumps

Title: ***"IPv6 Troubleshooting for Residential ISP Helpdesks (Using test-ipv6.com)"***

Contributors and authors:
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Jan Žorž (ISOC)

Tools used?

- **Fact 1.: We need to build a short and simple set of detect/explain/action scenarios that would help people at help desks identify and fix the issue**
- **Fact 2.: We need a simple online tool to detect the state of connectivity on the users computer**
- **Fact 3.: Test-ipv6.com is a very useful tool that detects the state of connectivity on the users computer**
- **So the idea emerged to bring Jason Fesler in the group and talk him into creating a special version of the tool meant specially for ISP helpdesks ☺**

Tools used?

Test your IPv6 connectivity.

For the Help Desk | Summary | Tests Run | Share Results / Contact | Other IPv6 Sites

Your Internet help desk may ask you for the information below.

Help desk code: 46t

Dual Stack, Possible Tunnel

IPv4: Good, AS198644 - GO6 Zavod za IPv6 - go6,SI
IPv6: Good, AS2121 - RIPE-MEETING-AS Reseaux IP Europeens Network Coordination Centr
OtherSites: 50/50 good

IPv4 address: 91.239.97.101
IPv6 address: 2001:67c:64:42:fc13:17c1:7f76:7788

More information about this page, including how to bookmark it: faq_helpdesk.html.

If your Internet help desk asks you to mail the 'results url', copy and paste the following URL. Note that this will share your current numeric Internet Protocol address(es). We do not recommend posting this link on public web sites such as forums.

http://isp.testipv6.com?ip4=91.239.97.101&ip6=2001:67c:64:42:fc13:17c1:7f76:7788&a=ok,577&aaaa=ok,228&ds=ok,544&ipv4=ok,465&ipv6=ok,367&v6mtu=ok,237&v6ns=ok,1548&dsmtu=ok,386

On most computers, you can right-click the above URL, and select 'Copy'.

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Example: one of the possible generic situations

Help desk code: 624

6to4

IPv4: Good, AS65536, CableCo

IPv6: Good, 6to4, Preferred

IPv4 address: 192.0.2.1

IPv6 address: 2001:db8::1

Example (continued):

Interpretation: “6to4” was used to provide an IPv6 address; and the host was configured to actively take advantage of this service. Any web site that has an IPv6 presence, will be reached using 6to4 instead of native IPv4. Modern operating systems do not prefer these kinds of tunnels by default. Be aware that the user might have a very old operating system or a non-default configuration.

Action: 1. Have the user disable any automatic tunneling mechanisms that are active. 6to4 is a protocol that tries to get IPv6 traffic through a public relay, using IPv4 to reach the public relay. Public 6to4 relays offer no SLA; and published studies show approximately 15% failure rates. Windows: Disable tunnel interfaces using http://support.microsoft.com/kb/929852 (for example, Microsoft Fix it 50412).

Example (Action continued):

2. If IPv6 is desired, configure IPv6 (verify the user has an IPv6 address, and a default route). and test again. If user is still experiencing access issues, follow the troubleshooting steps for the corresponding code returned by http://isp.test-ipv6.com/

Example (hardest and longest one):

112 - IPv4, plus Broken IPv6

Help desk code: 112

IPv4: Good, AS65536, CableCo

IPv6: broken

IPv4 address: 192.0.2.1

Example (hardest and longest one):

Interpretation: IPv6 network connectivity somewhere between the user and the website is broken. IPv6 connections are timing out instead of succeeding (or failing fast to IPv4). The user experience visiting major web sites may be suffering, and some applications completely failing.

Assumption: User has already power cycled home router, modem, and device, as part of your standard troubleshooting procedure.

Action: 1. Determine whether IPv6 is offered to this customer, based on company documentation. If yes, continue to the next step.

2. …

Status and future work?

Document is in second final pre-draft stage and is currently submitted to

- RIPE BCOP TF and subsequently to RIPE IPv6 WG

Join the mailing lists and contribute to discussion:

RIPE BCOP TF: https://www.ripe.net/mailman/listinfo/bcop

RIPE IPv6 WG ML: http://www.ripe.net/mailman/listinfo/ipv6-wg/

Issues/comments/ideas tracker URL: https://git.steffann.nl/go6/ipv6-troubleshooting-for-helpdesks/issues

After we go through first few community consensus building cycles and document edits we MAY choose to submit it for comments also to other BCOP efforts in other continents depending on interest from other regions.

Where the document lives and resides?

http://go6.si/v6helpdesks

New versions of the document will be added as they emerge, ;)

Please read the draft and comment! All ideas for improvements are very welcome.

Thank you! Comments/Questions?

mailto:<v6troubleshooting@go6.si>